REPORT

ON THE

SANITARY CONDITION

OF

PUDSEY

DURING THE YEAR 1896,

BY

W. L. HUNTER,

B.A., M.D., Dub. D.P.H. Camb.

MEDICAL OFFICER OF HEALTH.

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THOS. STILLINGS, PRINTER, "PUDSEY NEWS" OFFICE.

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List of Members of the Sanitary Committee, 1896.

CHAIRMAN :

G. A. JONES.

CHAIRMAN OF THE COUNCIL :

J. E. GOODALL.

R. V. BOWLING,

S. MYERS,

H. HODGSON,

J. HUGGAN,

W. B. POTTS,

J. WOMERSLEY.

PUDSEY

Urban Sanitary Authority.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH.

MR. CHAIRMAN AND GENTLEMEN,

I herewith beg to present my Report on the Health of the District during the year 1896.

Pudsey comprises an area of 2,409 acres.

The Population in 1891 (census) was 13,444.

The Population for 1896 was 13,995.

The Rateable Value for General District purposes is £41,295.

The Rateable Value for Poor Rate purposes is £47,437.

The Poor Rate 2s. 8d.

The District Rate 3s. 6d.

The Town is divided into Five Wards.

Industries.—There are 30 mills or workshops in the town. The chief trades of the place are woollen and worsted (18 mills), ironworks (3), tanning (2), boot-making (1).

Topography.—The district is roughly pear-shaped, the stem end being West and the broad end East. It is bounded on the North by the Local Board Districts of Calverley and Farsley and the County Borough of Leeds; on the East by Leeds; on the South by Leeds and the Local Board District of Tong; on the West by the County Borough of Bradford.

The subsoil consists of clay, clayey loam and shale.

Altitude.—The height above the sea level varies from 225 ft. at Houghside to 625 at Greentop.

Vital Statistics.—Calculated on the **numerated Population for 1896—13,995.**

The Births registered during the year numbered 412 (males 230, females 182), giving a **Birth-rate of 29.4 per 1000.**

The Deaths for the year numbered 259 (males 138, females 121), giving a **Death-rate of 18.5 per 1000.**

The Deaths of Infants under one year of age numbered **60,** and, calculated on the number of children whose births were registered during the year, give an **Infantile Death-rate of 145.**

The Deaths from the seven principal Zymotic Diseases, namely, small-pox, measles, scarlet fever, diphtheria and membranous croup, whooping cough, "fever" (typhus, simple, continued and enteric) and diarrhœa, numbered **32,** giving a **Zymotic Death-rate of 2.2 per 1000.**

There were 45 deaths from bronchitis, pneumonia and pleurisy, giving a **Respiratory Death-rate of 3.2 per 1000.**

There were 22 deaths from Phthisis, giving a **Phthisis Death-rate of 1.5 per 1000.**

Deaths registered as due to old age—15.

Deaths above 80 years of age—11 (the oldest being 88).

Deaths from injury—4.

Suicides—2 (1 poison, 1 drowning).

Inquests held—14.

Uncertificated deaths registered—0.

Illegitimate births registered—9.

Still-born children buried in the Cemetery—24.

The Death and Birth Returns are obtained from the Registrar every week with unfailing regularity.

England and Wales.—1896, Birth-rate 29.7; Death-rate 17.1 (Urban 18, Rural 15.3.) Infants, per 1000 births, 148. Zymotic 2.18.

TABLE A.—The following Table shows the Births; Total Deaths; Deaths from Zymotic and other classes of diseases, etc., for the last fifteen years. (Some of the spaces are blank for want of information).

	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	**1896**
Births	...	390	343	374	351	332	323	311	347	326	352	356	367	417	**412**
Deaths	259	235	259	216	259	251	291	313	294	294	226	254	203	253	**259**
Infants under One Year	...	...	...	...	...	...	71	74	59	51	54	60	43	80	**60**
Phthisis	23	20	22	24	27	22	32	25	21	13	17	23	16	12	**22**
Seven Zymotic Diseases	41	54	40	22	40	23	26	57	23	27	14	43	9	28	**32**
Small Pox	0	1	0	0	0	0	0	0	0	0	0	1	0	0	**0**
Measles	9	4	8	0	8	3	3	34	0	1	4	8	0	1	**19**
Scarlet Fever	4	6	5	3	11	10	1	1	0	4	1	1	5	1	**0**
Diphtheria & Membranous Croup	4	4	6	1	5	1	4	4	3	2	1	3	1	1	**4**
Whooping Cough	6	3	0	8	1	0	15	0	4	14	0	0	0	0	**7**
Diarrhœa	7	31	18	5	12	5	1	12	4	3	2	25	2	22	**0**
Fever (Typhus / Enteric / Continued) ...	12	5	3	5	3	4	2	6	12	3	6	5	1	3	**2**
Chest Complaints (Bronchitis / Pneumonia / Pleurisy)	46	63	56	51	56	66	86	72	93	89	51	44	38	41	**45**
Heart Disease	17	...	10	13	18	18	13	21	19	19	13	14	10	24	**22**
Injuries	5	...	7	4	7	6	3	10	8	11	6	9	6	5	**4**
Cancer	...	...	...	...	...	...	...	...	...	8	12	7	12	16	**7**

The Birth-rate is a little less than last year, but compares favourably with that of the previous years. In 1889 and 1891 it reached the abnormally low rate of 23.1. If this rate had been maintained for 1896 it would mean that about 80 fewer children would have been born.

The Death-rate is 1 per 1000 below the average for the last 10 years.

The Infantile Death-rate (145) is a great improvement on that of 1895 (191).

The deaths from **Zymotic Diseases** are high from the prevalence of Measles.

The **Respiratory Diseases** caused more deaths than usual. This was what one would expect from the bad weather that prevailed during the year.

The deaths from **Phthisis** were more than in any year since 1889.

Table showing deaths at different age periods, 1896.

Under 1 year.	1 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 65 years.	Over 65 years of age.	Total.
60	47	10	10	77	55	259

Comparative Mortality of the Five Wards, 1896.

Wards.	Number of Deaths in Each Quarter.				Total Deaths	Death-Rate for Year.
	1	2	3	4		
North... ...	12	20	12	25	69	**22·0**
South... ...	13	11	10	12	46	**17·3**
East	10	14	14	21	59	**20·2**
West	5	12	13	10	40	**16·5**
Central ...	12	11	8	14	45	**15.6**

Infectious Diseases.—With the exception of Measles the town was fairly clear of this kind of disease. The total number of the cases notified is shown below.

The Infectious Disease (Notification) Act, 1889. This Act was adopted by the Council and came into force on April 1st, 1895.

Cases Notified in 1896.

Quarter.	Age	Small-pox	Cholera	Diphtheria	Croup	Erysipelas	Scarlet Fever	Enteric Fever	Puerperal Fever	Total
1st	Under 5				2					10
	Over 5			2		4		1	1	
2nd	Under 5									5
	Over 5			1		3		1		
3rd	Under 5				1	1	1			11
	Over 5					2		6		
4th	Under 5			1						18
	Over 5					8		8	1	
Whole Year	Under 5			1	3	1	1			6
	Over 5			3		17		16	2	38
Total				4	3	18	1	16	2	44
Deaths ...				1	3	2		2	1	9
Removed to Hospital.				1			1	4		

Small-Pox.—There was no case reported during the year.

Pudsey Vaccination Returns for the Year 1895.

Number of Births registered from Jan. 1st to Dec. 31st.	Successfully Vaccinated.	Insusceptible.	Dead Unvaccinated.	Postponed by Medical Certificate (A).	Removed to Places.		Not finally accounted for (D).	Percentaged of Uuvaccinated children including columns A.B.C.D.
					Known. (B).	Unknown. (C).		
421	322	2	64	6	1	18	8	7·8

This Table may be compared with the number of Un-vaccinated Children, 11-6 p.c. in 1890, 12-7 p.c. in 1891, 10-4 p.c. in 1892, 7-2 in 1893, and 6-7 in 1894.

Scarlet Fever.—The town was singularly free from this complaint, only one case being notified which was at once isolated in hospital and the house and other inmates disinfected.

Enteric Fever.—Sixteen cases were notified, four of which were removed to the hospital, two died, one in hospital and one at home. The cases were sporadic and no connection could be traced between them. In every case the premises were inspected, and steps taken to amend any sanitary defects found. The cases that remained at home were supplied with fever pails for the excreta, and a sufficiency of perchloride disinfecting fluid. The bedding, after recovery, or death, was disinfected at the hospital. The midden attached to the houses were also cleansed out and disinfected in every case.

Whooping Cough.—Only a few cases came to my notice.

Measles.—This disease prevailed during nearly the whole year. Measles is a very fatal disease and kills more than twice as many as scarlet fever every year. It is highly infectious, especially in the early stages before the rash appears, and on this account it is exceedingly difficult to prevent its spread as the infection is diffused before the nature of the ailment is recognised. Every care should be taken to isolate the cases, and especially in bad weather, great pains should be taken to avoid exposure to cold, as the mortality is largely due to bronchitis and pneumonia which occur as complications.

The Local Government Board during 1896 issued for the guidance of Sanitary Authorities a Special Report (60 pages) on the control of Measles by their inspector, Dr. Theodore Thompson. It is the result of several years enquiry, and I have briefly summarised some of the principal points in it :

1.—The subject is an important one, as Measles has shown a general tendency to increase, whereas the death-rate of nearly all the other diseases of the zymotic class, *e.g* , Scarlet Fever, Enteric Fever, Small-pox, &c., have continually decreased. During the ten years 1885-94 the sum total of deaths from Measles in England and Wales reached no less than 129,496, or a yearly mean of 12,950.

2.—As compared with some of the other zymotic diseases there are special difficulties in dealing with Measles by way of prevention, *e.g.*, It is extremely infectious, especially in its earliest stages, before the nature of the disease is declared. Another difficulty is that the general public hold the disease in slight estimation, and it is difficult to get people to adopt any precautions.

3.—Dr. Thompson advises the trial of a number of practical measures which he is of opinion will be of service in preventing and checking outbreaks of the complaint. He says: "It cannot be too clearly understood that good result is not to be expected from the adoption of any single one of these several measures; if any approach to complete success be aimed at, each one of the measures indicated must be regarded as necessary and supplementary to the others."

4.—Sanitary Districts that have adopted the precautionary measures recommended have found the results to be satisfactory, and proportionate to the thoroughness displayed in putting them into operation.

5.—Very shortly the measures recommended are :

a. Notification of all cases of Measles from every available source—Medical men, parents, school teachers, school attendance officers, relieving officers, registrars, clergy, district visitors, &c.

b. Minute enquiry into the source of each case, and a careful search for any fresh cases by the Sanitary Authority. The issue of instructive handbills to the public.

c. Removal to isolation hospital when possible, and failure that strict isolation at home.

d Strict supervision by the Sanitary Authority of all known cases, thorough final disinfection being especially insisted upon.

e The closure of schools, or the exclusion of scholars who came from infected houses or districts.

f. Large gatherings of children, *e.g.*, at Sunday-schools, entertainments, &c., should be discouraged.

Calverley Joint Hospital Summary for 1896.

	Scarlet Fever	Enteric Fever	Diph-theria	Admitted	Dis-charged	Died
Pudsey ...	1	4	1	6	5	1
Farsley ...	5	6		11	11	1
Calverley ...		1		1		
Eccleshill ...	4	3		7	2	2
Idle	6	2		8	5	1
Total	16	16	1	33	23	5

The following figures show the number of cases admitted into the Hospital since it was opened in November, 1891 ; also the number and proportion of deaths.

Disease.	Number Admitted	Deaths.	Percentage of Deaths.
Scarlet Fever ...	317	13	4.1
Enteric Fever...	79	11	14
Small-pox ...	66	3	4.5
Diphtheria ...	A few		

Scavenging and Refuse Disposal.—The town is divided into twelve districts for scavenging purposes, three of them are done by private contractors and the rest by the Council. There appears to be no doubt that the work connected with the latter is done more efficiently, at a smaller cost, and with less trouble than in the district done by private contractors. The difficulty of finding a safe and substantial place for depositing the contents of the privy-middens is sure to be an increasing one, and in the case of many towns has necessitated the erection of refuse distributors for destroying the material by fire.

For the preservation of the public health it is necessary to remove all filth speedily and when doing so to cause as little nuisance as possible. It is evident that the privy-midden system does not fulfil these rational principles. On the contrary the filth is carefully stored near dwelling houses, and when it has become very offensive by decomposition it is removed in a way that is highly obnoxious and the cause of frequent well-founded complaints. By the water closet system the sewerage is at once removed and cleared completely away. It is gratifying to record that the old fashioned, disgusting, insanitary privy-middens are being gradually replaced in increasing numbers every year by some type of water closets, and that nearly all the new houses built in 1896 were provided with them. The charge of 8s. per year which interfered considerably with the adoption of waste-water closets was abolished during the year.

The approximate number of each kind in the town, at the end of the year, was as follows :

PRIVY MIDDENS... ...	Old-fashioned	360
	Newer type	610
WATER CLOSETS ...	Ordinary W. C's.	104
	Trough Closets	30
	Waste Water Closets	64

In 28 houses Iron Covered Dust Bins are in use instead of the large unseemly ashpit. They are cheaper, more easily kept clean, and save the scavenger much labour.

In my former Annual Reports I pointed out the particular necessity, on the score of decency and health, for water closets in factories and schools. With regard to the latter I quote from a paper by Mr. W. Spinks, Lecturer on Sanitary Engineering to the Yorkshire College.

"The position of members of school boards, trustees, managers and even masters is a very responsible one so far as it relates to the maintenance of the health of the children entrusted to their care each day by the parents. The vast majority of the children are necessarily ignorant of hygienic laws, many of them perfectly helpless in such matters, and it is therefore essential that the sanitary appliances of our schools should be absolutely above suspicion, and should be arranged and constructed upon the most approved principles, and worked and maintained so that there shall not be the slightest fear of any danger to the health of the children using them.

Sanitary Requirements.—The sanitary requirements of all schools are closets, lavatories, and in the boys' schools urinals. Drains to carry off all this polluted water, as well as all the surface water off the roofs and play-grounds.

Closets.—With regard to closets, we must first of all agree that no system can be tolerated unless it is a cleanly one, and the only satisfactory sanitary system is the removal of the excrement off the premises the moment it comes into existence, and this of course can only be done by water carriage."

"Infantile mortality, as well as the mortality of young children, is far too high in our manufacturing towns. Let there no longer be any taint or suspicion that some of the seeds of childhood's diseases find a fruitful soil for propagation in the premises where the state compels the child to be sent for its mental training. *Mens sana in corpore sano* is still a favourite cry. Let, then, the healthy body be nurtured in a healthy atmosphere, and let the eye be trained to accustom itself to clean surroundings, so that when the child has grown to man's estate he will have acquired in his early training habits that will make repulsive to him the use of many so-called sanitary arrangements which are inflicted upon the dwellers in our towns, and that will ensure his keeping orderly and clean his own surroundings."

Cleaning of House-Drain Gullies.—This is done by a man appointed by the Council. It is obviously good sanitary work as these traps are close to dwelling-houses, and the stagnant sewage in them soon becomes offensive. It is utterly useless to depend on them being cleansed regularly by the householders. The figures below are interesting as bearing on this subject.

Dwelling Houses	Through	898
	"Salt-pie"	1449
	Back-to-back	963
House Drainage	Rubble	1502
	Pipe	2012
Size of Gullies	6 inch	1757
	9 inch	376
	12 inch	11
Untrapped Drains (No Gullies).	... ...	1430

Main Sewering.—The configuration of the town naturally divides it into the following drainage districts :— Littlemoor, Fulneck, Fartown, Smalewell, Central, Waterloo, Stanningley, Lowtown and Crimbles.

The sewering of the Littlemoor, Fartown, Central and Waterloo districts has been completed.

During the year about 450 yards of sewering, costing about £500, was done in the Stanningley district. This takes the sewage of Varley Street, Varley Mills and Primrose Hill. Another short sewer was constructed under the railway at Lowtown. This is about 200 yards long, and cost about £300. Intercepting sewers, 2,318 feet long, and costing about £2000, for Roker Lane and Littlemoor, have been in progress, and are nearly finished. Instructions have been given to the Surveyor to prepare plans and specifications for the Stanningley district. This is a thickly populated, rapidly growing, and in some parts very insanitary district. Until the main sewering is completed there is not much chance of improving its sanitary condition.

At the end of the year, altogether about 11,000 yards of main sewering, costing about £11,000, were completed.

Sewage Treatment.—It is proposed to have two sewage treatment works, one at Hough Side for the sewage of the greater part of the town ; and the other at Delph End, chiefly for the sewage of Smalewell and Waterloo. No steps have yet been taken for the construction of the former. The smaller works at Delph End were finished in August, and since then have been in regular operation ; and on the whole the result has been satisfactory. It must be kept in mind that the carrying on of such work must at first be more or less experimental, and that experience is necessary to arrive at the method of working which will give the best results. It is also important to note that the works were only estimated to treat the sewage of 214 houses, with a population of about 1000 people, and without making any calculation for trade effluents. At present four times the quantity of sewage is treated, nearly all from mills and factories, and only about 50 houses contribute to the total.

The Surveyor, Mr. Cass, has kindly given me the following description of the Delph End sewage works " The works consist of two precipitation tanks having a total capacity of 68,249 gallons. The tanks are so made that they

can be worked continuously or on the "quiet rest" system, and either separately or both together. After the effluent leaves the tanks it is passed through filters made of three feet thickness of broken stone covered with fifteen inches of ashes obtained from the ashpits of dwelling houses, and which have been exposed to the oxidising influence of the air for some months. There are two sets of pipes in the filters, a lower set for the discharge of the effluent, and an upper set to carry air into the filters.

The total filtering area is about 864 square yards, which is divided into six beds of 144 square yards each. It has been found that one filter will pass through it 34,124 gallons per day, or about 237 gallons per square yard per day. So far the effluent has been fairly good, and the dye water has been decolourised. The filters appear to require half time rest, or a little more, and need raking over once in each week. None of the filtering material has as yet been removed or cleansed, and the filters are as good, or better, after working five months, as they were at first. Alumino-ferric is used as a precipitant.

The table attached shows the result of six successive weeks analysis which I have made of the sewage and effluent, also notes on the details of the management of the works by Mr. Cass. The samples were taken every hour for eight successive hours and mixed together.

River Pollution.—Sanitary Authorities are under a legal obligation to treat their sewage in such a way as to avoid pollution of streams or water courses. The law in this respect is not now very different to what it has been since 1875, but one most important change has recently taken place. Whereas up to the present the law has not been enforced and in consequence "masterly inactivity" has been the rule, for the future it will be necessary for the authorities to take into their calculations the strict enforcement of the law relating to sewage treatment and river pollution by the County Council and the Rivers' Board.

House Drainage.—I reproduce my remarks on this subject from my last year's report, as they even apply with greater force as another year has gone by :—

"Although so much of the main sewering is finished, a "comparatively small number of the house drains have been "connected, and these have been joined in in consequence of

Weekly Analyses of Sewage and Effluents from Smalewell Works.

Date.	Description.	Reaction.	Ammonia (parts per million.)		Solids (Grains per gallon.)			
			Free.	Albumenoid	Total.	Mineral.	Organic.	Suspended.
1896								
	Sewage	Alkaline	68	58	323			140
Oct. 16th	After Precipitation	,,						
	Effluent	,,	6.2	1.4	70			0
	Sewage	Alkaline	74	64	555			185
Oct. 22nd	After Precipitation	Acid			64			
	Effluent	Alkaline	2.2	.8	62			0
	Sewage	Alkaline	54	34	444			214
Oct. 30th	After Precipitation	,,	16	14	56			0
	Effluent	,,	5.8	1.7	58			0
	Sewage	Acid	8	32	200			50
Nov. 6th	After Precipitation	Alkaline	8	14	69			0
	Effluent	,,	2.4	1.8	162			5
	Sewage	Alkaline	5	1.8	149			49
Nov. 12th	After Precipitation	,,	2	.8	96	50	46	0
	Effluent	,,	.4	1.2	79	57	22	0
	Sewage	Acid	3	1.8	163			42
Nov. 19th	After Precipitation	,,		.6	88	44	44	0
	Effluent	Alkaline	1.2	1.2	82	56	16	10

Details of the Working of the Sewage Works.

Nature of Sewage.	Precipitation Tanks.		Filters.			
	How Working.	When Sludged.	No. of Beds Working	How long Working.	Last Period of Rest.	When last Raked.
Domestic Sewage with Wool Suds and Cloth Scouring	2 Tanks working on continuous flow.	No. 1 Sept. 12th No. 2 Sept. 16th	Nos. 1 & 2	1 day	7 days each	Sept. 1st
Domestic Sewage with Wool Suds and Cloth Scouring	2 Tanks working on continuous flow.	No. 1 Oct. 19th No. 2 Oct. 17th	No. 1	7 days	5 days	Oct. 12th
Domestic Sewage with Wool Suds and Cloth Scouring	2 Tanks working on continuous flow.	No. 1 Sept. 12th No. 2 Sept. 16th	No. 2	5 days	5 days	Oct. 17th
Domestic Sewage and Dye Water	2 Tanks working on continuous flow.	No, 1 Oct. 19th No. 2 Oct. 17th	Nos. 5 & 6	2 days	7 weeks	No. 5, Sept. 17th No. 6, Sept. 18th
Domestic Sewage and Dye Water	2 Tanks working on continuous flow.	No. 1 Sept. 12th No. 2 Sept. 16th	Nos. 5 & 6	9 days	7 weeks	No. 5, Sept. 17th No. 6, Sept 18th
Domestic Sewage and Dye Water	2 Tanks working on continuous flow.	No. 1 Oct. 19th No. 2 Oct. 17th	Nos. 1 & 2	1 day	Nos. 1 & 2 12 days	No. 1, Oct. 24th No. 2, Nov. 3rd

" something urgent cropping up, and not as part of a general " system. Obviously the work of connecting the house drains " to the sewers should be hurried on, and done on some " regular method, care being taken that the closest attention " be paid to the details of the work, in order to avoid in " future the expense, worry and danger that some of the slip- " shod work of the past has caused, and will continue to do " for some time. Badly done work weakens the hands of the " authority, and brings discredit on sanitary work in general. " It can only be prevented by skilled and honest supervision, " and to spend sufficient money in securing such inspection is " true economy. It is a manifest absurdity to lay down main " sewers without joining in the house drains, but that such a " procedure is possible is proved by the fact that the houses " abutting on some lengths of deep sewers finished about " fourteen years ago have only recently been connected, and " then only when special investigation revealed that they did " not discharge into the sewers. It was wrongly taken for " granted that all the houses had been connected. This shows " how easy it is for such important work to be neglected if " not done on some regular plan."

" It is pleasant to record that the work completed in the " last few years has been done in a thorough manner. The " Council insist on the use of Stamford jointed pipes of the " first quality, the most modern gullies, disconnection and " inspection chambers, and the needful arrangements for " efficient ventilation. The Surveyor and Assistant Sanitary " Inspector by advising and inspecting do their best to secure " proper workmanship."

BYE-LAWS.—In his First Annual Report to the County Council for 1889, Dr. Whitelegge, at that time County Medical Officer, remarked:—" In many of the districts of the Riding the " bye-laws are out of date and of little use."

The following are extracts from my Annual Reports to the Local Sanitary Authority:—

1891. Report to Local Board.

" The Board has bye-laws relating to building, " draining, &c. These bye-laws do very little good or harm, " as neither the public nor the Board respect them. I have " gone carefully through them, especially with regard to " those relating to building and draining, and can understand

"the reason why they are neglected. They are out of date, "and bear the same relation to the Local Government Model "Bye-laws that the old rush-light bears to gas."

1892. Report to Local Board.

"I advise the adoption and the carrying out of the "Model Bye-Laws of the Local Government Board with "respect to—1, cleansing of privies, &c.; 2, nuisances; 3, "common lodging houses; 4, new streets and buildings; 5, "slaughter houses; 6, offensive trades." I also noted that "I heard that the Board had under consideration the Local "Government Model Bye-Laws with regard to New Streets "and Buildings."

1893. Report to Local Board.

"In 1892 the Local Board determined to adopt the "Local Government Board Model Bye-Laws for New "Buildings. For some reason they have not come into "force. This is a matter that should be hurried on, as the "town, especially now that new buildings are being put up "every day, is suffering from the delay." And went on to "say "It is very important for the proper management of a "town that out-of-date byelaws should be shelved, and "replaced by the modern model ones as recommended by "the Local Government Board."

1894. Report to District Council.

"In 1892 the Local Board determined to adopt the "Local Government Model Bye-Laws for New Buildings, "with a few alterations. There has been a long correspon- "dence with the Local Government Board, and at the end "of 1894 the Local Board had accepted the Model Bye- "Laws in their entirety, except the part relating to back-to- "back houses, the building of which they wished to retain "the power to allow. The sooner the matter is settled the "better, as new buildings are being put up every day, and "consequently the town is suffering from the delay." "I "would urge the Council to thoroughly overhaul their "present bye-laws and bring them up-to-date, also to frame "new bye-laws under Part III of the Public Health Acts "Amendment Act, 1890. It is impossible to be too careful "in making sure that new houses are in every respect well- "built and free from any danger to health. They should not "be inhabited without a certificate to that effect from the "Council."

1895. Report to District Council.

"Now, at the end of another year I regret to report "that very little more progress has been made.

"The correspondence is still going on."

In this, my present Report for 1896, I have only to add that

The correspondence is still going on.

and in the meantime a class of building is being rapidly put up that is no credit to an important growing town, and that almost inevitably will bring ill-repute to the town, and provide ample work for the medical men of the future.

As this unbusinesslike delay is undoubtedly a serious matter, I append a short summary of the correspondence referred to, up to date, omitting reference to unimportant letters such as those acknowledging the receipt of others.

1892.

June 7th. The Local Government Board wrote to the Sanitary Authority reminding them **"That it is of much importance, especially in a growing district, that the construction of new streets and buildings should be properly regulated, and by the making, and due enforcement of appropriate Bye-laws, objectionable and unwholesome conditions may be prevented, which if allowed to come into existence, can often only be remedied with much difficulty and expense."** The letter went on urging the Sanitary Authority to consider the propriety of making Bye-laws on the Local Government Board model.

August 25th, 1892. The Sanitary Authority wrote to inform the Local Government Board that the matter was under consideration.

1893.

July 15th. The Sanitary Authority sent the draft Bye-laws for approval.

July 26th. The Local Government Board returned the draft for amendment.

September 9th. The amended draft was returned by the Sanitary Authority.

November 8th. The draft was returned by the Local Government Board with alterations.

1894.

January 17th. The Sanitary Authority wrote saying that they were willing to accept all the alterations and suggestions of the Local Government Board except the clause preventing middens from being put nearer than 6ft. to a house. They suggested a minimum space of 3ft. instead.

April 11th. A letter from the Sanitary Authority to say that they were willing to agree to the midden being at least 6ft. away from houses in the front and rear, but asking for permission to have power to lessen the distance to 3ft. at the sides. A request was also made for power to allow the building of back to back houses.

June 7th. The Local Government Board wrote to say they could not assent to the 3ft. distance for middens, nor to the permission to build back to back houses.

October 24th. A letter from the Local Government Board asking the Sanitary Authority what was being done in the matter.

November 13th. The Sanitary Authority replied saying that they would accept the 6ft. limit for middens, but decided to continue the use of the old bye-laws rather than adopt new ones which deprived them of the power of allowing the building of back to back houses.

December 12th. Local Government Board asked for draft to be again submitted.

December 13th. Draft re-submitted by Sanitary Authority.

1895.

February 12th The Local Government Board wrote to say they could not sanction back to back houses.

May 29th. The Local Government Board wrote again to ask what was being done about the Bye-Laws, and called attention to the reports of the Medical Officer of Health as to the desirability of proceeding without delay in the matter.

June 11th. The Sanitary Authority wrote to say the matter was under consideration.

September 9th. The Sanitary Authority re-submitted the draft.

October 7th. The draft returned by Local Government Board for amendment.

November 6th. Draft re-submitted by Sanitary Authority.

1896.

January 18th. The Sanitary Authority wrote to ask when they might receive the observations of the Local Government Board.

May 13th. The Sanitary Authority wrote to the same effect.

July 11th.—The draft was returned.

September 21st. The draft, with various alterations and amendments, was re-submitted by the Sanitary Authority for the consideration of the Local Government Board.

November 24th. The Sanitary Authority wrote to ask when they might expect a reply.

Private Streets (Courts, Yards, Alleys, and Footpaths.)—In my report for last year I noted that the Sanitary Committee had given much attention to the insanitary state of the private streets. The improvement that has been effected in the last two years has been marked, and there is much less ground for the uncomplimentary criticism of visitors, official and otherwise, to the town, that existed before that time. It is pleasant to compare the present state of Scott Hill, Greentop, Green Lane, Varley Street, St. Lawrence Terrace and Crawshaw Fields, etc., with their condition two or three years ago.

I trust the energy of the Council will be next directed to the improvement of the footpaths which form such a large and an important part of the highways of the town. They are really very bad, and some idea of their condition in wet weather may be gathered from the remarks of some of the members of the Council when the state of the footpaths was under discussion at a Council meeting in November. One is reported to have said that "It was nearly heart-rending to hear of people having to work the day through with wet stockings," another to have said that "When he had come from his house to that meeting he had arrived with his boots full of water and could not avoid it, and it could not be at all pleasant to have to work a full day in that state."

Public Streets and Roads.—The proper construction and care of the streets has a distinct bearing on the health of the people. Hard, smooth, impervious surfaces facilitate the flowing off of water, and prevent its soaking into the

house foundations. They are also easier to clear. A thick covering of mud in wet weather, in addition to causing wet feet, makes the air damp and cold. It also provides the "Raw material" for the production of dust in dry weather, and dust, in addition to the discomfort and injury to property it causes, is a vehicle for the carrying about of all kinds of disease germs.

Water Supply.—A few houses have no water supply except shallow wells in the cellars about a foot deep. A larger number are supplied from deep wells. About 120 houses get their supply from Leeds. All the other houses are supplied by the District Council with water bought from the Bradford Corporation which thus constitutes the main supply of the town. The daily consumption is about 13·5 gallons per day per head for all purposes, and 9·3 gallons per head for domestic purposes only excluding the water used for trade.

In the autumn the water from Bradford was exceedingly dirty. Complaints reached me from all parts of the town. On several occasions I have seen a bathful of water drawn from a service pipe that could only be described as liquid mud. Complaints were made to the Bradford Corporation and as a result by the end of the year the water supplied was fairly clean. Similar complaints were made by other Sanitary Authorities supplied from the same source.

I have continued my weekly estimations of the quantity of lead contained in the water drawn the first thing in the morning from a lead service pipe 180 feet long, the result is shown on page 21. It shows the great difference between the present amount of lead taken up by the water compared with 1892, when the water was not treated to prevent lead absorption, and in consequence plumbism was prevalent.

Week Ending. 1896.	1896. Hardness, Degrees.	Alkalinity Parts per million, in terms of carbonate of lime.	Weekly Average Grains of Lead per Gallon.	Monthly Average Grains of Lead per Gallon.	1892. Monthly Averages Grains of Lead per Gallon.
January 4th			.08		
,, 11th	6.5	18.5	.12	.10	.45
,, 18th			.12		
,, 25th			.07		
Feb. 1st			.08		
,, 8th			.08		
,, 15th	6.5	17.	.06	.10	.33
,, 22nd			.14		
,, 29th			.14		
March 7th			.07		
,, 14th	6.5	17.2	.07	.07	.60
,, 21st			.07		
,, 28th			.06		
April 4th			.1		
,, 11th	5.5	20.0	.15	.07	.5
,, 18th			.0		
,, 25th			.05		
May 2nd			Trace		
,, 9th			,,		
,, 16th	6.	15 5	,,	Trace	.48
,, 23rd			,,		
,, 30th			,,		
June 6th			,,		
,, 13th	6.	15.5	,,	,,	.65
,, 20th			,,		
,, 27th			,,		
July 4th			.12		
,, 11th	5.6	19 5	.05	.07	.47
,, 18th			Trace		
,, 25th			.04		
August 1st			.08		
,, 8th			.04		
,, 15th	5 5	18.6	.1	.09	.39
,, 22nd			.1		
,, 29th			.15		
Sept. 5th			.04		
,, 12th	4.7	20.0	.04	0.6	.22
,, 19th			.08		
,, 26th			.1		
October 3rd			.1		
,, 10th			.1		
,, 17th	5.2	20.0	.15	.13	.27
,, 24th			.15		
,, 31st			.15		
Nov. 7th			.15		
,, 14th	4.7	17.5	.15	.12	.24
,, 21st			.09		
,, 28th			.09		
Dec. 5th			.08		
,, 12th	5.2	10.	.04	.06	.21
,, 19th			.08		
,, 26th			.04		

Workshops and Factories.—With Mr. Cass I made an inspection of 73 workshops during the year. We also visited and enquired into the sanitary state of each new workshop when reported to me by the Factory Inspector. On the whole we found the sanitary condition fairly good, the chief deficiency being in the matter of closet accommodation and drainage. In this respect they are neither better nor worse than the general run of dwelling houses in the town, and in the ordinary course of events will share in the improvements which are being carried on by gradually substituting water closets for privy-middens, and the change for the better in house drainage that of necessity will follow on the completion of the main sewering.

Since the Factory Inspector wrote and complained of the closet accommodation of a number of the factories, several of them have fully complied with the request of the Council to abate the nuisance referred to. In others no change for the better has taken place.

House to House Inspection.—I made with Mr. Cass an inspection of the district lying between Richardshaw Lane and St. Thomas's Church. The result is summarised on page 23. The streets and yards are nearly all rough, unpaved and undrained, so that the surface water stands in pools after rain, and for the same reason they cannot be kept clean. The privy accommodation is for the most part insufficient and unsatisfactory in every way. Everything points to the need for the main sewering of this portion of the town.

Table showing some details of House to House Inspection of 124 Houses.

Sink Drains.	Trapped and disconnected	24
	„ „ connected	38
	Untrapped and disconnected	16
	„ „ connected	29
	Houses without sinks	17
Drainage.	With a few exceptions all the drainage is bad. The drains, a rule, being rubble, without gullies.	
	Water in cellars	10
Water Sup'ly	Pipe water—from Leeds	84
	„ „ Bradford	39
	Pump	1
Description of Houses.	Back to back	49
	Houses with windows at back ...	47
	Through houses, with back door ...	28
Populat'n	Children under 5	66
	Over 5	511
	Total Population....	577

Number of Nuisances abated for the last Five Years.

		1892.	1893.	1894.	1895.	1896.	Total.
Order of Sanitary Authority.	Legal Proceedings ...	5				26	31
	Legal Notices	107	62	89	68	266	592
Preliminary Notices ...	Personal Arrangement	968	686	910	690	339	3593

TABLE D.—Summary of Sanitary Inspector's Report—1896

	No of Complaints received	Full Ashpits	117
		Nuisances	149
	No of Houses, Premises, &c., inspected		2260
	No of Nuisances reported		700
	No of Nuisances abated		937
	No of Re-inspections, Works in Progress		2027
Results of Inspections.	Orders issued for Sanitary Amendments		66
	Houses, Premises, &c., Cleansed and Limewashed		5
	Accumulations removed		32
	Animals removed, being a Nuisance		9
	Yards, Courts, &c., Cleansed		3
	Notices to Scavengers to Cleanse Ashpits		35
	Cases of Overcrowding abated		4
	Privies	Altered	4
		New Provided	75
	Ashpits	Altered	5
		New Provided	20
Drains.	Length in feet		11879
	Trapped		162
	Disconnected		321
	Cleansed		35
	Ventilated		49
Regular Inspections.	Cowsheds		130
	Slaughter-houses		76
	Bakehouses...		
	Common Lodging-houses		13
	Factories and Workshops		73
	Legal proceedings		2
	Smoke Observations		36

WM. LOVELL HUNTER.

PUDSEY (YORKS).

METEOROLOGY FOR 1896.

Observations taken at 9 a.m. (500 feet above sea-level.)

	BAROMETER.						THERMOMETER IN SHADE.								DEGREES OF HUMIDITY. (Saturation = 100)					
												Daily Means.								
1896.	Highest.	Day of Month.	Lowest	Day of Month.	Range	Mean	Highest	Day of Month	Lowest.	Day of Month.	Range	Max.	Min.	Mean range.	Dry bulb.	Highest.	Day of Month.	Lowest.	Day of Month.	Range	Mean.
Jan. ...	30 50	9th	28.96	15th	1.54	29.83	55°	3rd	27°	21st	28°	43°	37°	6°	40°	100	4th and 5th	77	16th and 19th	23	88
Feb ...	30.23	3rd	29.22	20th	1.01	29.84	50°	8th	25°	26th	25°	43°	36°	7°	38°	93	21st	57	10th	36	83
March	29.83	10th	28.23	4th	1.60	29.29	54°	25th	33°	13th	21°	46°	38°	8°	42°	93	11th and 25th	45	31st	48	79
April	30.04	20th	29.36	10th	.68	29.71	51°	25th	34°	13th	27°	52°	42°	10°	47°	91	14th	55	26th	36	74
May...	30.07	26th	29.44	20th	.63	29.86	77°	13th	37°	1st and 21st	40°	60°	45°	15°	54°	93	18th	44	12th	49	79
June	29.70	29th	29.22	10th and 17th	.48	29.55	80°	16th	46°	1st	34°	67°	53°	14°	60°	100	7th	50	21st	50	74
July...	29.90	17th	29.30	26th	.60	29.61	79°	21st	46°	28th	33°	67°	53°	14°	61°	100	30th	44	12th	56	73
Aug.	29.87	10th	29.20	26th	.67	29.61	65°	2nd and 18th	45°	27th	20°	60°	51°	9°	56°	100	24th and 31st	48	22nd	52	81
Sept.	29.99	30th	28.40	25th	1.59	29.31	63°	3rd and 11th	41°	21st	22°	57°	50°	7°	53°	100	3rd, 11th, 25th and 30th	68	28th	32	87
Oct ...	30.0	1st	28.73	18th	1.27	29.28	59°	3rd	33°	26th	26°	46°	40°	6°	43°	100	10th	66	8th	34	84
Nov...	30.20	25th	28.83	15th	1.37	29.72	47°	12th and 22nd	26°	30th	21°	42°	38°	4°	39°	100	16th	74	6th and 29th	26	84
Dec ...	29.83	29th	28.47	4th	1.36	29.31	50°	27th	26°	1st	24°	39°	35°	4°	38°	100	12th and 22nd	67	19th	33	87

Rainfall, 1896.

Month.	Inches.	Number of Days Rain Fell.	Most in One Day.
January	·74	14	·17
February	·70	6	·29
March	3·14	26	·40
April	1·43	15	·27
May	·57	4	·43
June	3·95	16	·73
July	1·89	13	·38
August	1·49	15	·39
September	5·45	23	1·40
October	4·03	23	·62
November	3‘01	12	·47
December	3·76	18	·67
Total for 1896 ...	30·16	185	

Four Feet Ground Temperature—1896.

Date.	Degrees.	Date.	Degrees	Date.	Degrees.
January 1 to 8	44·5	May 1 to 11	44	October 1 to 4	51·5
,, 9 to 12	44	,, 12 to 15	44·5	,, 5 to 12	51
,, 13 to 16	43·5	,, 16 to 24	45	,, 13 to 16	50·5
,, 17 to 22	43	,, 25 to 31	45·5	,, 17 to 22	50
,, 23 to 31	42·5			,, 23 to 31	49·5
		June 1 to 5	47		
February 1 to 8	42·5	,, 6 to 11	49		
,, 8 to 24	42	,, 12 to 15	51	Nov. 1 to 2	49
,, 25 to 29	41·5	,, 16 to 24	51·5	,, 3 to 7	48·5
		,, 25 to 30	52	,, 8 to 15	48
March 1 to 5	41			,, 16 to 22	47·5
,, 6 to 22	41·5	July 1 to 20	52	,, 23 to 30	47
,, 23 to 31	42	,, 21 to 26	52·5		
		,, 27 to 31	53	Dec. 1 to 5	46·5
April 1 to 8	42	August 1 to 31	53	,, 6 to 12	46
,, 9 to 17	42·5			,, 13 to 16	45·5
,, 18 to 22	43	Sept. 1 to 23	52·5	,, 17 to 23	45
,, 23 to 30	43·5	,, 24 to 30	52	,, 24 to 31	44·5

Meteorology Summary for Year 1896.

	Maximum.	Minimum.	Mean.	Range.
Barometer ...	30.50	28.23	29·57	2.27
Thermometer	80°	25°	48°	55°
Humidity ...	100 degrees	44 degrees	81 degrees	56 degrees.